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Examiners Pak and Eyler suggested presenting the invention as a generic claim with linking species claims, so that the restriction requirement for the species claims would be withdrawn upon allowance of the generic linking claim.

The invention

In one aspect, the present application provides, for the first time, identification of a family of calcium-activated potassium channels. This family is called the "SK" family, for small conductance potassium channels, and includes three genes, SK1, SK2, and SK3. This family of channels is highly conserved (about 80-90% identity) over a core sequence of approximately 300 amino acids. Furthermore, this family of channels share functional characteristics, such as pharmacological properties (apamin sensitivity) and small conductance properties.

Status of the claims

New claims 100-106 have been added. These claims are directed to nucleic acids encoding an SK2 potassium channel monomer. These claims add no new matter. Support for these claims can be found, e.g., in claims 1-10, 19, 26-28, 30, 36-42, and 44-46 as originally filed. Support can also be found in the specification on page 20, lines 28-29, page 24, lines 12-13, page 28, lines 21-31, and page 73, lines 29-31.

Sequence identifiers

For the Examiner's convenience, Applicants provide the following table that gives the name of the gene, the species from which it was cloned, and the sequence identifier for all the genes disclosed in the patent application.

GENE	AMINO ACID SEQUENCE IDENTIFIER	NUCLEIC ACID SEQUENCE IDENTIFIER
rat SK1	SEQ ID NO:4	SEQ ID NO:14
human SK1	SEQ ID NO:1	SEQ ID NO:13
rat SK2	SEQ ID NO:2	SEQ ID NO:15
human SK2	SEQ ID NO:19	SEQ ID NO:21
rat SK3	SEQ ID NO:3 and 43	SEQ ID NO:16 and 44
human SK3	SEQ ID NOS:20 and 47	SEQ ID NO:22 and 48
human IK	SEQ ID NO:32	SEQ ID NO:31

Response to restriction requirement

In response to the restriction requirement dated March 19, 2001, Applicants continue to elect to prosecute Group II, previously pending claims 1-4, 6, 8-10, 19, 26-28, 30, 36-42, and 44-46, drawn to isolated nucleic acids encoding hSK2. This Group corresponds to new claims 100-106.

New claims 100-106 recite a genus of SK2 nucleic acids that hybridize under stringent conditions to the human SK2 nucleic acid sequence (SEQ ID NO:21), and also recite species that fall within this genus, e.g., rat SK2 (nucleic acid--SEQ ID NO:15, amino acid--SEQ ID NO:2) and human SK2 (nucleic acid--SEQ ID NO:21, amino acid--SEQ ID NO:19).

The foregoing election is made with traverse. Applicants request that Group II, human SK2, and Group V, rat SK2, be examined together, as human and rat SK2 are orthologs of the same gene.

Applicants note that claim 100 is a genus claim linking the dependent species claims 101-106. As such, upon allowance of a linking genus claim, the restriction requirement should be withdrawn with respect to the species claims. MPEP 809.03. Applicants further note that when the requirement for restriction is predicated upon the non-allowability of a generic linking claim, Applicant is entitled to retain in the case claims to the non-elected

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invention. If the generic linking claim is allowed, the Examiner must then examine non-elected claims to species falling within the genus. MPEP 809.04.

Finally, restriction of an application is discretionary. A restriction requirement is made to avoid placing an undue examination burden on the Examiner and the Office. Where claims can be examined together without undue burden, the Examiner must examine the claims on the merits even though they are directed to independent and distinct inventions. MPEP 803.01. Applicants respectfully submit that examining the claims of Groups II and V together (nucleic acids encoding SK2 potassium channel monomers) would not place an undue burden on the Examiner. Applicants therefore respectfully request that the restriction requirement with respect to Groups II and V be withdrawn.

CONCLUSION

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 415-576-0200.

Respectfully submitted,


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